

SEQUENCE LISTING

<110> Cohen, Dalia et al.

<120> Identification of Genes Involved in
Alzheimer's Disease Using Drosophila Melanogaster

<130> 4-31612 A

<150> 60/236,893

<151> 2000-09-29

<150> 60/298,309

<151> 2001-06-14

<160> 53

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<212> DNA

<213> Homo Sapien

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<213> Homo Sapien

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<213> Homo Sapien

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atagcgacag tgatcgtcat caccttgggtg atgctgaaga agaaacagta cacatccatt	180
catcatggtg tgggtggaggt tgacgccgct gtcaccccag aggagcgcca cctgtccaag	240
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 atagcgacag tgatcatcat caccttgggtg atgctgaaga agaaacagta cacatccatt 180
 catcatggtg tgggtggaggt tgacgcgcgt gtcaccccag aggagcgcca cctgtccaag 240
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Thr	Trp	Gln	Leu	Gln	Trp	Asp	Glu	Leu	Gly	Asp	Gly	Val	Glu	Glu	Arg	
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Arg	Ala	Glu	Gln	Leu	Lys	Leu	Phe	Glu	Met	Leu	Val	Ser	Glu	Ala	Arg	
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Gly	Leu	Val	Leu	Leu	Leu	Ser	Gln	Leu	Cys	Val	Cys	Val	Ala	Gln	Glu	
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Ala	Pro	Arg	Leu	Leu	Phe	Ser	Arg	Leu	Val	Pro	Phe	Val	His	Arg		
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Glu	Gly	Thr	Leu	Gly	Gln	Gln	Ala	Arg	Asp	Ala	Leu	Leu	Leu	Leu	Met	
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Ser	Tyr	Phe	Cys	Pro	Val	Leu	Ala	Thr	Gly	Leu	Ser	Ala	Leu	Tyr	Ser	
	210					215					220					
Ser	Leu	Pro	Arg	Lys	Ile	Glu	Val	Pro	Gly	Asp	Asp	Trp	His	Cys	Leu	
225					230					235					240	
Arg	Arg	Glu	Asp	Trp	Leu	Gly	Val	Pro	Ala	Leu	Ala	Leu	Phe	Met	Ser	
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Ser Leu Glu Phe Cys Asn Ala Val Ile Gln Val Ala His Pro Leu Val
260 265 270
Gln Lys Gln Leu Val Asp Tyr Ile His Asn Gly Phe Leu Val Pro Val
275 280 285
Met Gly Pro Ala Leu His Lys Thr Ser Val Glu Glu Met Ile Ala Ser
290 295 300
Thr Ala Tyr Leu Glu Leu Phe Leu Arg Ser Ile Ser Glu Pro Ala Leu
305 310 315 320
Leu Arg Thr Phe Leu Arg Phe Leu Leu Leu His Arg His Asp Thr His
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Thr Ile Leu Asp Thr Leu Val Ala Arg Ile Gly Ser Asn Ser Arg
340 345 350

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<211> 1425
<212> DNA
<213> Homo Sapien

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gggccacact gatccgcac cctcttcac gagtccaacc tggacgcagg atcctgaacc 180
tactgagggg atggagagaa ccagcagagc tccccaagtt gggggcccca tccctgggg 240
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<212> PRT
<213> Homo Sapien

<400> 11
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Glu Pro Ser Gly Ala Thr Leu Ile Arg Ile Pro Leu His Arg Val Gln

<213> Homo Sapien

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aaggatctca agctgatgaa aaaactggag cggcagcggg cacaggagga acaggcaaag    180
cgcctggaag aggaggaggc agcggcagag aaggaggacc gcgggcggcc ctacacactg    240
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gacagccccc accacatgcg tcaggatgag gaatccagat tccgagaggg catcgtggtg    600
gatcggccca cccggccagg ccacggctcc tttgtcaact gtggcatgaa aaaggagggtg    660
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caccagact gcaagacctt ccatggcaaa gtggtatcat cgcaggaccc tcgcacaaa    780
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tttgacctgt acgtcaatac ctgtcctggc cagggtagcc gtaccatccg cacggaggaa   1080
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<211> 381

<212> PRT

<213> Homo Sapien

<400> 13

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Lys Lys Glu Glu Lys Lys Lys Trp Lys Asp Leu Lys Leu Met Lys Lys
 35              40              45
Leu Glu Arg Gln Arg Ala Gln Glu Glu Gln Ala Lys Arg Leu Glu Glu
 50              55              60
Glu Glu Ala Ala Ala Glu Lys Glu Asp Arg Gly Arg Pro Tyr Thr Leu
 65              70              75              80
Ser Val Ala Leu Pro Gly Ser Ile Leu Asp Asn Ala Gln Ser Pro Glu
 85              90              95
Leu Arg Thr Tyr Leu Ala Gly Gln Ile Ala Arg Ala Cys Ala Ile Phe
100              105              110
Cys Val Asp Glu Ile Val Val Phe Asp Glu Glu Gly Gln Asp Ala Lys
115              120              125
Thr Val Glu Gly Glu Phe Thr Gly Val Gly Lys Lys Gly Gln Ala Cys
130              135              140
Val Gln Leu Ala Arg Ile Leu Gln Tyr Leu Glu Cys Pro Gln Tyr Leu
145              150              155              160
Arg Lys Ala Phe Phe Pro Lys His Gln Asp Leu Gln Phe Ala Gly Leu
165              170              175
Leu Asn Pro Leu Asp Ser Pro His His Met Arg Gln Asp Glu Glu Ser
180              185              190
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Glu Phe Arg Glu Gly Ile Val Val Asp Arg Pro Thr Arg Pro Gly His
 195 200 205
 Gly Ser Phe Val Asn Cys Gly Met Lys Lys Glu Val Lys Ile Asp Lys
 210 215 220
 Asn Leu Glu Pro Gly Leu Arg Val Thr Val Arg Leu Asn Gln Gln Gln
 225 230 235 240
 His Pro Asp Cys Lys Thr Tyr His Gly Lys Val Val Ser Ser Gln Asp
 245 250 255
 Pro Arg Thr Lys Ala Gly Leu Tyr Trp Gly Tyr Thr Val Arg Leu Ala
 260 265 270
 Ser Cys Leu Ser Ala Val Phe Ala Glu Ala Pro Phe Gln Asp Gly Tyr
 275 280 285
 Asp Leu Thr Ile Gly Thr Ser Glu Arg Gly Ser Asp Val Ala Ser Ala
 290 295 300
 Gln Leu Pro Asn Phe Arg His Ala Leu Val Val Phe Gly Gly Leu Gln
 305 310 315 320
 Gly Leu Glu Ala Gly Ala Asp Ala Asp Pro Asn Leu Glu Val Ala Glu
 325 330 335
 Pro Ser Val Leu Phe Asp Leu Tyr Val Asn Thr Cys Pro Gly Gln Gly
 340 345 350
 Ser Arg Thr Ile Arg Thr Glu Glu Ala Ile Leu Ile Ser Leu Ala Ala
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 370 375 380

<210> 14
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 <212> DNA
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<400> 15

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Val	Pro	Pro	Ser	Asp	Pro	Leu	Arg	Gln	Ala	Asn	Arg	Leu	Pro	Ile	Lys
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Val	Leu	Lys	Met	Leu	Thr	Ala	Arg	Thr	Gly	His	Ile	Leu	His	Pro	Glu
		100						105					110		
Tyr	Leu	Gln	Pro	Leu	Pro	Ser	Thr	Pro	Val	Ser	Pro	Ile	Glu	Leu	Asp
	115						120					125			
Ala	Lys	Lys	Ser	Pro	Leu	Ala	Leu	Leu	Ala	Gln	Thr	Cys	Ser	Gln	Ile
	130					135					140				
Gly	Lys	Pro	Asp	Pro	Ser	Pro	Ser	Ser	Lys	Leu	Ser	Ser	Lys	Ser	Gly
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Phe	Arg	Val	Pro	Ser	Ala	Thr	Cys	Gln	Pro	Phe	Thr	Pro	Arg	Thr	Gly
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Ser	Pro	Ser	Ser	Ser	Ala	Ser	Ala	Cys	Ser	Pro	Gly	Gly	Met	Leu	Ser
		180						185					190		
Ser	Ala	Gly	Gly	Ala	Pro	Glu	Gly	Lys	Asp	Asp	Lys	Lys	Asp	Thr	Asp
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Val	Gly	Gly	Gly	Gly	Lys	Gly	Thr	Gly	Gly	Ala	Ser	Ala	Glu	Gly	Gly
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Pro	Thr	Gly	Leu	Ala	His	Gly	Arg	Ile	Ser	Cys	Gly	Gly	Gly	Ile	Asn
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Val	Asp	Val	Asn	Gln	His	Pro	Asp	Gly	Gly	Pro	Gly	Gly	Lys	Ala	Leu
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Gly	Ser	Asp	Cys	Gly	Gly	Ser	Ser	Gly	Ser	Ser	Ser	Gly	Ser	Gly	Pro
		260						265					270		
Ser	Ala	Pro	Thr	Ser	Ser	Ser	Val	Leu	Gly	Ser	Gly	Leu	Val	Ala	Pro
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Gly	Met	Thr	Tyr	Pro	Gly	Ser	Leu	Ala	Gly	Ala	Tyr	Ala	Gly	Tyr	Pro
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 His Cys Ala Ser His Leu Ala Gly Ala Ala Ala Ala Ser Ala Ser Cys
 385 390 395 400
 Ala His Asp Pro Ala Ala Ala Ala Ala Leu Lys Ser Gly Tyr Pro
 405 410 415
 Leu Val Tyr Pro Thr His Pro Leu His Gly Val His Ser Ser Leu Thr
 420 425 430
 Ala Ala Ala Ala Ala Gly Ala Thr Pro Pro Ser Leu Ala Gly His Pro
 435 440 445
 Leu Tyr Pro Tyr Gly Phe Met Leu Pro Asn Asp Pro Leu Pro His Ile
 450 455 460
 Cys Asn Trp Val Ser Ala Asn Gly Pro Cys Asp Lys Arg Phe Ala Thr
 465 470 475 480
 Ser Glu Glu Leu Leu Ser His Leu Arg Thr His Thr Ala Phe Pro Gly
 485 490 495
 Thr Asp Lys Leu Leu Ser Gly Tyr Pro Ser Ser Ser Ser Met Ala Ser
 500 505 510
 Ala Ala Ala Ala Ala Met Ala Cys His Met His Ile Pro Thr Ser Gly
 515 520 525
 Ala Pro Gly Ser Pro Gly Asp Ala Gly Ala Ala Gln Pro Pro Pro Arg
 530 535 540
 Ala Gly Thr Gln Gln Pro Leu Pro Pro Leu Leu Gln Glu Pro Ala Ser
 545 550 555 560
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 580 585 590
 Gly

<210> 16
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 <212> DNA
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<400> 16
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 <212> PRT
 <213> Homo Sapien

<400> 17

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Leu	Thr	Ala	Ala	Ala	Ala	Gly	Ala	Thr	Pro	Pro	Ser	Leu	Ala	Gly	
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Pro	Gly	Thr	Asp	Lys	Leu	Leu	Ser	Gly	Tyr	Pro	Ser	Ser	Ser	Ser	Met
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Ala	Ser	Ala	Ala	Ala	Ala	Met	Ala	Cys	His	Met	His	Ile	Pro	Thr	
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Leu	Pro	Thr	Pro	Gly	Ala	Pro	Val	Pro	Val	Pro	Ala	Ala	Thr	Gly	Pro
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<210> 18

<211> 4022
 <212> DNA
 <213> Homo Sapien

<220>
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 <223> n = A,T,C or G

<400> 18

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<210> 19

<211> 1265

<212> PRT

<213> Homo Sapien

<220>

<221> VARIANT

<222> (1)...(1265)

<223> Xaa = Any Amino Acid

<400> 19

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His His Arg Gly Glu Xaa Xaa Arg Arg Gln Glu Glu Ala Ala Leu Leu
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Ser Gln Glu Phe Ala Glu Ala Trp Gly Gln Lys Ala Lys Glu Leu Tyr
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Glu Pro Ile Trp Gln Asn Phe Thr Asp Pro Gln Leu Arg Arg Ile Ile
65          70          75          80
Gly Ala Val Arg Thr Leu Gly Ser Ala Asn Leu Pro Leu Ala Lys Arg
85          90          95
Gln Gln Tyr Asn Ala Leu Leu Ser Asn Met Ser Arg Ile Tyr Ser Thr
100         105         110
Ala Lys Val Cys Leu Pro Asn Lys Thr Ala Thr Cys Trp Ser Leu Asp
115         120         125
Pro Asp Leu Thr Asn Ile Leu Ala Ser Ser Arg Ser Tyr Ala Met Leu
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Leu Phe Ala Trp Glu Gly Trp His Asn Ala Ala Gly Ile Pro Leu Lys
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 Asp Gly Phe Thr Asp Thr Gly Ala Tyr Trp Arg Ser Trp Tyr Asn Ser
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 Pro Thr Phe Glu Asp Asp Leu Glu His Leu Tyr Gln Gln Leu Glu Pro
 195 200 205
 Leu Tyr Leu Asn Leu His Ala Phe Val Arg Arg Ala Leu His Arg Arg
 210 215 220
 Tyr Gly Asp Arg Tyr Ile Asn Leu Arg Gly Pro Ile Pro Ala His Leu
 225 230 235 240
 Leu Gly Asp Met Trp Ala Gln Ser Trp Glu Asn Ile Tyr Asp Met Val
 245 250 255
 Val Pro Phe Pro Asp Lys Pro Asn Leu Asp Val Thr Ser Thr Met Leu
 260 265 270
 Gln Gln Gly Trp Asn Ala Thr His Met Phe Arg Val Ala Glu Glu Phe
 275 280 285
 Phe Thr Ser Leu Glu Leu Ser Pro Met Pro Pro Glu Phe Trp Glu Gly
 290 295 300
 Ser Met Leu Glu Lys Pro Ala Asp Gly Arg Glu Val Val Cys His Ala
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 Ser Ala Trp Asp Phe Tyr Asn Arg Lys Asp Phe Arg Ile Lys Gln Cys
 325 330 335
 Thr Arg Val Thr Met Asp Gln Leu Ser Thr Val His His Glu Met Gly
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 His Ile Gln Tyr Tyr Leu Gln Tyr Lys Asp Leu Pro Val Ser Leu Arg
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 Arg Gly Ala Asn Pro Gly Phe His Glu Ala Ile Gly Asp Val Leu Ala
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 385 390 395 400
 Arg Val Thr Asn Asp Thr Glu Ser Asp Ile Asn Tyr Leu Leu Lys Met
 405 410 415
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 Val Thr Arg Asn Glu Thr His Phe Asp Ala Gly Ala Lys Phe His Val
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 Pro Asn Val Thr Pro Tyr Ile Arg Tyr Phe Val Ser Phe Val Leu Gln
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Thr Lys Glu Asn Tyr Asn Gln Glu Trp Trp Ser Leu Arg Leu Lys Tyr
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 Ala Gly His Thr Gly Pro Leu His Lys Cys Asp Ile Tyr Gln Ser Lys
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 <211> 954
 <212> DNA
 <213> Homo Sapien

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<210> 21

<211> 288
 <212> PRT
 <213> Homo Sapien

<400> 21

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			20					25					30			
Gln	Met	Thr	Cys	Gln	Ser	Cys	Val	Asp	Ala	Val	Arg	Lys	Ser	Leu	Gln	
		35					40					45				
Gly	Val	Ala	Gly	Val	Gln	Asp	Val	Glu	Val	His	Leu	Glu	Asp	Gln	Met	
	50				55					60						
Val	Leu	Val	His	Thr	Thr	Leu	Pro	Ser	Gln	Glu	Val	Gln	Ala	Leu	Leu	
65				70					75					80		
Glu	Gly	Thr	Gly	Arg	Gln	Ala	Val	Leu	Lys	Gly	Met	Gly	Ser	Gly	Gln	
			85					90					95			
Leu	Gln	Asn	Leu	Gly	Ala	Ala	Val	Ala	Ile	Leu	Gly	Gly	Pro	Gly	Thr	
		100					105						110			
Val	Gln	Gly	Val	Val	Arg	Phe	Leu	Gln	Leu	Thr	Pro	Glu	Arg	Cys	Leu	
	115				120							125				
Ile	Glu	Gly	Thr	Ile	Asp	Gly	Leu	Glu	Pro	Gly	Leu	His	Gly	Leu	His	
	130				135						140					
Val	His	Gln	Tyr	Gly	Asp	Leu	Thr	Asn	Asn	Cys	Asn	Ser	Cys	Gly	Asn	
145				150					155					160		
His	Phe	Asn	Pro	Asp	Gly	Ala	Ser	His	Gly	Gly	Pro	Gln	Asp	Ser	Asp	
		165						170					175			
Arg	His	Arg	Gly	Asp	Leu	Gly	Asn	Val	Arg	Ala	Asp	Ala	Asp	Gly	Arg	
	180						185					190				
Ala	Ile	Phe	Arg	Met	Glu	Asp	Glu	Gln	Leu	Lys	Val	Trp	Asp	Val	Ile	
	195				200							205				
Gly	Arg	Ser	Leu	Ile	Ile	Asp	Glu	Gly	Glu	Asp	Asp	Leu	Gly	Arg	Gly	
	210				215						220					
Gly	His	Pro	Leu	Ser	Lys	Ile	Thr	Gly	Asn	Ser	Gly	Glu	Arg	Leu	Ala	
225				230					235					240		
Cys	Gly	Ile	Ile	Ala	Arg	Ser	Ala	Gly	Leu	Phe	Gln	Asn	Pro	Lys	Gln	
		245						250				255				
Ile	Cys	Ser	Cys	Asp	Gly	Leu	Thr	Ile	Trp	Glu	Glu	Arg	Gly	Arg	Pro	
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Ile	Ala	Gly	Lys	Gly	Pro	Lys	Gly	Val	Ser	Ala	Ala	Pro	Ala	His	Leu	
	275					280						285				

<210> 22
 <211> 1006
 <212> DNA
 <213> Homo Sapien

<400> 22

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ttaagcgaatg	cctttgccca	ggtgaacccc	ctcaagaagg	tgccagcctt	gaaggacggg	180
gacttcacct	tgacggagag	tgtggccatc	ctgctctacc	tgacgcgcaa	atataaggctc	240
cctgactact	ggtacctca	ggacctgcag	gcccgctgcc	gtgtggatga	gtacctggca	300
tggcagcaca	cgactctgcg	gagaagctgc	ctccgggccc	tgtggcataa	ggtgatgttc	360
cctgttttcc	tgggtgagcc	agtatctccc	cagacactgg	cagccaccct	ggcagagttg	420

gatgtgaccc tgcagttgct cgaggacaag ttctccaga acaaggcctt ccttactggt 480
cctcacatct ccttagctga cctcgtagcc atcacggagc tgatgcatcc cgtgggtgct 540
ggctgccaag tcttcgaagg cgcacccaag ctggccacat ggcggcagcg cgtggaggca 600
gcagtggggg aggacctctt ccaggaggcc catgagggtca ttctgaaggc caaggacttc 660
ccacctgcag accccacccat aaagcagaag ctgatgccct ggggtgctggc catgatccgg 720
tgagctggga aacctacccc ttgcaccgtc ctgagcagtc cacaaagcat tttcatttct 780
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cccagagcac ctacacctcc gaagccacca tccccacct gtcttccaca gccgcctgaa 900
agccacaatg agaatgatgc aactgaggc cttgtgtccc tttaatcact gcatttcatt 960
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<210> 23
<211> 240
<212> PRT
<213> Homo Sapien

<400> 23
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Val Asp Leu Ile Lys Gly Gln His Leu Ser Asp Ala Phe Ala Gln Val
35 40 45
Asn Pro Leu Lys Lys Val Pro Ala Leu Lys Asp Gly Asp Phe Thr Leu
50 55 60
Thr Glu Ser Val Ala Ile Leu Leu Tyr Leu Thr Arg Lys Tyr Lys Val
65 70 75 80
Pro Asp Tyr Trp Tyr Pro Gln Asp Leu Gln Ala Arg Ala Arg Val Asp
85 90 95
Glu Tyr Leu Ala Trp Gln His Thr Thr Leu Arg Arg Ser Cys Leu Arg
100 105 110
Ala Leu Trp His Lys Val Met Phe Pro Val Phe Leu Gly Glu Pro Val
115 120 125
Ser Pro Gln Thr Leu Ala Ala Thr Leu Ala Glu Leu Asp Val Thr Leu
130 135 140
Gln Leu Leu Glu Asp Lys Phe Leu Gln Asn Lys Ala Phe Leu Thr Gly
145 150 155 160
Pro His Ile Ser Leu Ala Asp Leu Val Ala Ile Thr Glu Leu Met His
165 170 175
Pro Val Gly Ala Gly Cys Gln Val Phe Glu Gly Arg Pro Lys Leu Ala
180 185 190
Thr Trp Arg Gln Arg Val Glu Ala Ala Val Gly Glu Asp Leu Phe Gln
195 200 205
Glu Ala His Glu Val Ile Leu Lys Ala Lys Asp Phe Pro Pro Ala Asp
210 215 220
Pro Thr Ile Lys Gln Lys Leu Met Pro Trp Val Leu Ala Met Ile Arg
225 230 235 240

<210> 24
<211> 2442
<212> DNA
<213> Homo Sapien

<400> 24
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Ala	Cys	Ala	Gln	Asn	Gly	Leu	Glu	Val	Ser	Leu	Ser	Ser	Leu	Asn	Leu	85	90		95
Ala	Val	Pro	Pro	Pro	Arg	Phe	Pro	Glu	Asp	Lys	Ala	Lys	Tyr	Asp	Ala	100	105		110
Ile	Phe	Asp	Ser	Leu	Ser	Pro	Val	Asn	Gly	Phe	Leu	Ser	Gly	Asp	Lys	115	120		125
Val	Lys	Pro	Val	Leu	Leu	Asn	Ser	Lys	Leu	Pro	Val	Asp	Ile	Leu	Gly	130	135		140
Arg	Val	Trp	Glu	Leu	Ser	Asp	Ile	Asp	His	Asp	Gly	Met	Leu	Asp	Arg	145	150		155
Asp	Glu	Phe	Ala	Val	Ala	Met	Phe	Leu	Val	Tyr	Cys	Ala	Leu	Glu	Lys	165	170		175
Glu	Pro	Val	Pro	Met	Ser	Leu	Pro	Pro	Ala	Leu	Val	Pro	Pro	Ser	Lys	180	185		190
Arg	Lys	Thr	Val	Ser	Ile	Ser	Gly	Ser	Val	Arg	Leu	Ile	Pro	Ser	Ser	195	200		205
Ala	Ser	Ala	Lys	Glu	Ser	Tyr	His	Ser	Leu	Pro	Ser	Val	Gly	Ile	Leu	210	215		220
Pro	Thr	Lys	Ala	Pro	Leu	Arg	Gln	Trp	Val	Val	Ser	Pro	Ala	Glu	Lys	225	230		235
Ala	Lys	Tyr	Asp	Glu	Ile	Phe	Leu	Lys	Thr	Asp	Lys	Asp	Met	Asp	Gly	245	250		255
Phe	Val	Ser	Gly	Leu	Glu	Val	Arg	Glu	Ile	Phe	Leu	Lys	Thr	Gly	Leu	260	265		270
Pro	Ser	Thr	Leu	Leu	Ala	His	Ile	Trp	Ser	Leu	Cys	Asp	Thr	Lys	Asp	275	280		285
Cys	Gly	Lys	Leu	Ser	Lys	Asp	Gln	Phe	Ala	Leu	Ala	Phe	His	Leu	Ile	290	295		300
Ser	Gln	Lys	Leu	Ile	Lys	Gly	Ile	Asp	Pro	Pro	His	Val	Leu	Thr	Pro	305	310		315
Glu	Met	Ile	Pro	Pro	Ser	Asp	Arg	Ala	Ser	Leu	Gln	Lys	Asn	Ile	Ile	325	330		335
Gly	Ser	Ser	Pro	Val	Ala	Asp	Phe	Ser	Ala	Ile	Lys	Glu	Leu	Asp	Thr	340	345		350
Leu	Asn	Asn	Glu	Ile	Val	Asp	Leu	Gln	Arg	Glu	Lys	Asn	Asn	Val	Glu	355	360		365
Gln	Asp	Leu	Lys	Glu	Lys	Glu	Asp	Thr	Ile	Lys	Gln	Arg	Thr	Ser	Glu	370	375		380
Val	Gln	Asp	Leu	Gln	Asp	Glu	Val	Gln	Arg	Glu	Asn	Thr	Asn	Leu	Gln	385	390		395
Lys	Leu	Gln	Ala	Gln	Lys	Gln	Gln	Val	Gln	Glu	Leu	Leu	Asp	Glu	Leu	405	410		415
Asp	Glu	Gln	Lys	Ala	Gln	Leu	Glu	Glu	Gln	Leu	Lys	Glu	Val	Arg	Lys	420	425		430
Lys	Cys	Ala	Glu	Glu	Ala	Gln	Leu	Ile	Ser	Ser	Leu	Lys	Ala	Glu	Leu	435	440		445
Thr	Ser	Gln	Glu	Ser	Gln	Ile	Ser	Thr	Tyr	Glu	Glu	Glu	Leu	Ala	Lys	450	455		460
Ala	Arg	Glu	Glu	Leu	Ser	Arg	Leu	Gln	Gln	Glu	Thr	Ala	Glu	Leu	Glu	465	470		475
Glu	Ser	Val	Glu	Ser	Gly	Lys	Ala	Gln	Leu	Glu	Pro	Leu	Gln	Gln	His	485	490		495
Leu	Gln	Asp	Ser	Gln	Gln	Glu	Ile	Ser	Ser	Met	Gln	Met	Lys	Leu	Met				

	500		505		510
Glu Met Lys Asp Leu Glu Asn His Asn Ser Gln Leu Asn Trp Cys Ser					
515			520		525
Ser Pro His Ser Ile Leu Val Asn Gly Ala Thr Asp Tyr Cys Ser Leu					
530			535		540
Ser Thr Ser Ser Ser Glu Thr Ala Asn Leu Asn Glu His Val Glu Gly					
545			550		555
Gln Ser Asn Leu Glu Ser Glu Pro Ile His Gln Glu Ser Pro Ser Asp					
565			570		575
Pro Phe Val Gly Asn Pro Phe Gly Gly Asp Pro Phe Lys Gly Ser Asp					
580			585		590
Pro Phe Ala Ser Asp Cys Phe Phe Arg Gln Ser Thr Asp Pro Phe Ala					
595			600		605
Thr Ser Ser Thr Asp Pro Phe Ser Ala Ala Asn Asn Ser Ser Ile Thr					
610			615		620
Ser Val Glu Thr Leu Lys His Asn Asp Pro Phe Ala Pro Gly Gly Thr					
625			630		635
Val Val Ala Ala Ser Asp Ser Ala Thr Asp Pro Phe Ala Ser Val Phe					
645			650		655
Gly Asn Glu Ser Phe Gly Gly Gly Phe Ala Asp Phe Ser Thr Leu Ser					
660			665		670
Lys Val Asn Asn Glu Asp Pro Phe Arg Ser Ala Thr Ser Ser Ser Val					
675			680		685
Ser Asn Val Val Ile Thr Lys Asn Val Phe Glu Glu Thr Ser Val Lys					
690			695		700
Ser Glu Asp Glu Pro Pro Ala Leu Pro Pro Lys Ile Gly Thr Pro Thr					
705			710		715
Arg Pro Cys Pro Leu Pro Pro Gly Asn Asp Ser Pro Lys Glu Lys Asp					
725			730		735
Pro Glu Met Phe Cys Asp Pro Phe Thr Ser Ala Thr Thr Thr Thr Asn					
740			745		750
Lys Glu Ala Asp Pro Ser Asn Phe Ala Asn Phe Ser Ala Tyr Pro Ser					
755			760		765
Glu Glu Asp Met Ile Glu Trp Ala Lys Arg Glu Ser Glu Arg Glu Glu					
770			775		780
Glu Gln Arg Leu Ala Arg Leu Asn Gln Gln Glu Gln Glu Asp Leu Glu					
785			790		795
Leu Ala Ile Ala Leu Ser Lys Ser Glu Ile Ser Glu Ala					800
805			810		

<210> 26
 <211> 1357
 <212> DNA
 <213> Homo Sapien

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cgcacgttcg tggccttcgc cgccaagctc tggagcttct tcattttacct tctgcggagg	120
cagatccgca cggtaattca gtaccaaact gttcgatatg atatcctccc cttatctcct	180
gtgtcccgga atcggctagc ccaggtgaag aggaagatcc tgggtgctgga tctggatgag	240
acacttattc actcccacca tgatgggggc ctgaggccca cagtcgggcc tggtagcgcct	300
cctgacttca tcttcaaggt ggtaatagac aaacatcctg tccggttttt tgtacataag	360
aggccccatg tggatttctt cctggaagtg gtgagccagt ggtacgagct ggtggtgttt	420
acagcaagca tggagatcta tggtctgct gtggcagata aactggacaa tagcagaagc	480
attcttaaga ggagatatta cagacagcac tgcactttgg agttgggcag ctacatcaag	540

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gacctctctg tgggtccacag tgacctctcc agcattgtga tcctggataa ctccccaggg 600
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gacacagccc ttctcaacct gctcccaatg ctggatgccc tcaggttcac cgctgatgtt 720
cgttccgtgc tgagccgaaa ccttcaccaa catcggctct ggtgacagct gctccccctc 780
cacctgagtt ggggtggggg ggaaagggag ggcgagccct tgggatgccg tctgatgccc 840
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gccctacact ccacttgga gtctggatgg acacatgggc caggggctct gaagcagcct 960
cactcttaac ttcgtgttca cactccatgg aaacccaga ctgggacaca ggcggaagcc 1020
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tgatccagga ggctcaaaga gaagccaagt cagctttgtt gtgatttgat tttttttaa 1140
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gggatactgg gattttgggc cactggattt tccctaaatt tgtccccct ttactctccc 1260
tctatttttc tctccttaga ctccctcaga cctgtaacca gctttgtgtc ttttttcctt 1320
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<210> 27
 <211> 254
 <212> PRT
 <213> Homo Sapien

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<400> 27
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 20          25          30
Phe Phe Ile Tyr Leu Leu Arg Arg Gln Ile Arg Thr Val Ile Gln Tyr
 35          40          45
Gln Thr Val Arg Tyr Asp Ile Leu Pro Leu Ser Pro Val Ser Arg Asn
 50          55          60
Arg Leu Ala Gln Val Lys Arg Lys Ile Leu Val Leu Asp Leu Asp Glu
 65          70          75          80
Thr Leu Ile His Ser His His Asp Gly Val Leu Arg Pro Thr Val Arg
 85          90          95
Pro Gly Thr Pro Pro Asp Phe Ile Leu Lys Val Val Ile Asp Lys His
100          105          110
Pro Val Arg Phe Phe Val His Lys Arg Pro His Val Asp Phe Phe Leu
115          120          125
Glu Val Val Ser Gln Trp Tyr Glu Leu Val Val Phe Thr Ala Ser Met
130          135          140
Glu Ile Tyr Gly Ser Ala Val Ala Asp Lys Leu Asp Asn Ser Arg Ser
145          150          155          160
Ile Leu Lys Arg Arg Tyr Tyr Arg Gln His Cys Thr Leu Glu Leu Gly
165          170          175
Ser Tyr Ile Lys Asp Leu Ser Val Val His Ser Asp Leu Ser Ser Ile
180          185          190
Val Ile Leu Asp Asn Ser Pro Gly Ala Tyr Arg Ser His Pro Asp Asn
195          200          205
Ala Ile Pro Ile Lys Ser Trp Phe Ser Asp Pro Ser Asp Thr Ala Leu
210          215          220
Leu Asn Leu Leu Pro Met Leu Asp Ala Leu Arg Phe Thr Ala Asp Val
225          230          235          240
Arg Ser Val Leu Ser Arg Asn Leu His Gln His Arg Leu Trp
245          250

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<210> 28

<211> 1812
 <212> DNA
 <213> Homo Sapien

<400> 28

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aaatttgcag agcatggagg ttggcacggt tatggccttc ttcagagggtc agacaagaag      180
tatgatgaag ccattaagtg ttacagaaat gcactaaaat gggataaaga caatcttcaa      240
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tcccctgaca aggtggatta tgaatatagt gaactactct tatatcagaa tcaagttctt      360
cggaagcag gtctctatag agaagctttg gaacatcttt gtacctatga aaagcagatt      420
tgtgataaac ttgctgtaga agaaacccaa ggggaacttc tgttgcaact atgtcgtttg      480
gaagatgctg cagatgttta tagaggattg caagagagaa atcctgaaaa ctgggcctat      540
tacaaaggct tggaaaaagc actcaagcca gctaataatgt tagaacggct aaaaatttat      600
gaggaagcct ggactaaata tcccagggga ctgggtgccaa gaaggctgcc gttaaacttt      660
ttatctggtg agaagtttaa agaatgtttg gataagttcc taaggatgaa tttcagcaag      720
ggttgcccac cagtcttcaa tactttaaga tcattataca aagacaaaga aaaggtggca      780
atcatagaag agttagtagt aggttatgaa acctctctaa aaagctgccg gttatttaac      840
cccaatgatg atggaaagga ggaaccacca accacattac tttgggtcca gtactacttg      900
gcacaacatt atgacaaaat tggtcagcca tctattgctt tggagtacat aaatactgct      960
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gctggaaata ttaaagaagc tgcaagggtg atggatgagg ccagggcctt ggacacagca      1080
gacagattta tcaactccaa atgtgcaaaa tacatgctaa aagccaacct gattaaagaa      1140
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gaaatgcagt gcatgtggtt ccaaacagaa tgtgccagg cttataaagc aatgaataaa      1260
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gctatagaga tctatttgaa gcttcatgac aaccccccta cagatgagaa taaagaacac      1500
gaagctgata cagctgccaa aatggtatat tacttagatc cttctagtca gaagcgagct      1560
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<210> 29
 <211> 603
 <212> PRT
 <213> Homo Sapien

<400> 29

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Ile Leu Arg Cys Tyr Glu His Lys Gln Tyr Arg Asn Gly Leu Lys Phe
 20          25          30
Cys Lys Gln Ile Leu Ser Asn Pro Lys Phe Ala Glu His Gly Gly Trp
 35          40          45
His Val Tyr Gly Leu Leu Gln Arg Ser Asp Lys Lys Tyr Asp Glu Ala
 50          55          60
Ile Lys Cys Tyr Arg Asn Ala Leu Lys Trp Asp Lys Asp Asn Leu Gln
 65          70          75          80
Ile Leu Arg Asp Leu Ser Leu Leu Gln Ile Gln Met Arg Asp Leu Glu
 85          90          95
  
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530 535 540
 Ala Leu Tyr Asp Gly Ser Leu Gly Asp Cys Lys Glu Ala Ala Glu Ile
 545 550 555 560
 Tyr Arg Ala Asn Cys His Lys Leu Phe Pro Tyr Ala Leu Ala Phe Met
 565 570 575
 Pro Pro Gly Tyr Glu Glu Asp Met Lys Ile Thr Val Asn Gly Asp Ser
 580 585 590
 Ser Ala Glu Ala Glu Glu Leu Ala Asn Glu Ile
 595 600

<210> 30
 <211> 1351
 <212> DNA
 <213> Homo Sapien

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 gcaaacgtga ccgttgatcc agatgaagaa atggccaaaa tcgacaggac ggcgagggac 180
 cagtgtggga gccagccttg ggacaataat gcagtctgtg cagaccctg ctccctgatc 240
 cccacacctg acaaagaaga tgatgaccgg gtttacccaa actcaacgtg caagcctcgg 300
 attattgcac catccagagg ctccccgctg cctgtactga gctgggcaaa tagagaggaa 360
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 caacaccctc ttctgcagcc aaaaatgcga gcaattcttc tggattgggt aatggagggtg 480
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 tatatggcga cacaagaaaa tggtgtaaaa actcttttac agcttattgg gatttcatct 600
 ttattttattg cagccaaact tgaggaaatc tatcctccaa agttgcacca gtttgcgat 660
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 aagaaagcca tgttgtctga acaaaatagg gcttctcctc tccccagtgg gctcctcacc 1200
 ccgccacaga gcggtgttct gggctccgtt gtaccaagtg gagcaggtgg ttgcgggcaa 1260
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 acagtgatca atgcctttga tgaactgttt t 1351

<210> 31
 <211> 451
 <212> PRT
 <213> Homo Sapien

<220>
 <221> VARIANT
 <222> (1)...(451)
 <223> Xaa = Any Amino Acid

<400> 31
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 Asp Ala Lys Glu Arg Asp Thr Met Lys Glu Asp Gly Gly Ala Glu Phe
 20 25 30

Ser Ala Arg Ser Arg Lys Arg Lys Ala Asn Val Thr Val Asp Pro Asp
 35 40 45
 Glu Glu Met Ala Lys Ile Asp Arg Thr Ala Arg Asp Gln Cys Gly Ser
 50 55 60
 Gln Pro Trp Asp Asn Asn Ala Val Cys Ala Asp Pro Cys Ser Leu Ile
 65 70 75 80
 Pro Thr Pro Asp Lys Glu Asp Asp Asp Arg Val Tyr Pro Asn Ser Thr
 85 90 95
 Cys Lys Pro Arg Ile Ile Ala Pro Ser Arg Gly Ser Pro Leu Pro Val
 100 105 110
 Leu Ser Trp Ala Asn Arg Glu Glu Val Trp Lys Ile Met Leu Asn Lys
 115 120 125
 Glu Lys Thr Tyr Leu Arg Asp Gln His Phe Leu Glu Gln His Pro Leu
 130 135 140
 Leu Gln Pro Lys Met Arg Ala Ile Leu Leu Asp Trp Leu Met Glu Val
 145 150 155 160
 Cys Glu Val Tyr Lys Leu His Arg Glu Thr Phe Tyr Leu Ala Gln Asp
 165 170 175
 Phe Phe Asp Arg Tyr Met Ala Thr Gln Glu Asn Val Val Lys Thr Leu
 180 185 190
 Leu Gln Leu Ile Gly Ile Ser Ser Leu Phe Ile Ala Ala Lys Leu Glu
 195 200 205
 Glu Ile Tyr Pro Pro Lys Leu His Gln Phe Ala Tyr Val Thr Asp Gly
 210 215 220
 Ala Cys Ser Gly Asp Glu Ile Leu Thr Met Glu Leu Met Ile Met Lys
 225 230 235 240
 Ala Leu Lys Trp Arg Leu Ser Pro Leu Thr Ile Val Ser Trp Leu Asn
 245 250 255
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 Pro Gln Tyr Pro Gln Gln Ile Phe Ile Gln Ile Ala Glu Leu Leu Asp
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 Leu Cys Val Leu Asp Val Asp Cys Leu Glu Phe Pro Tyr Gly Ile Leu
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 Ala Ala Ser Ala Leu Tyr His Phe Ser Ser Ser Glu Leu Met Gln Lys
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 Pro Pro Gln Ser Gly Val Leu Gly Ser Val Val Pro Ser Gly Ala Gly
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 Gly Cys Gly Gln Ala Leu Cys Arg Ala His Ser Gln Leu Gly Arg Gly
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<210> 32
 <211> 3750
 <212> DNA
 <213> Homo Sapien

<400> 32

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<210> 33
 <211> 1249
 <212> PRT
 <213> Homo Sapien

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<400> 33
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 20          25          30
Gln Ser Asn Pro Ala Gln Ser Pro Phe Ser Pro His Ala Ser Pro His
 35          40          45
Leu Ser Ser Ile Pro Gly Gly Pro Ser Pro Ser Pro Val Gly Ser Pro
 50          55          60
Val Gly Ser Asn Gln Ser Arg Ser Gly Pro Ile Ser Pro Ala Ser Ile
 65          70          75          80
Pro Gly Phe Met Ala Gly Thr Gln Arg Asn Pro Gln Met Ala Gln Tyr
 85          90          95
Gly Pro Gln Gln Thr Gly Pro Ser Met Ser Pro His Pro Ser Pro Gly
100          105          110
Gly Gln Met His Ala Gly Ile Ser Ser Phe Gln Gln Ser Asn Ser Ser
115          120          125
Gly Thr Tyr Gly Pro Gln Met Ser Gln Tyr Gly Pro Gln Gly Asn Tyr
130          135          140
Ser Arg Pro Pro Ala Tyr Ser Gly Val Pro Ser Ala Ser Tyr Ser Gly
145          150          155          160
Pro Gly Pro Gly Met Gly Ile Ser Ala Asn Asn Gln Met His Gly Gln
165          170          175
Gly Pro Ser Gln Pro Cys Gly Ala Val Pro Leu Gly Arg Met Pro Ser
180          185          190
Ala Gly Met Gln Asn Arg Pro Phe Pro Gly Asn Met Ser Ser Met Thr
195          200          205
Pro Ser Ser Pro Gly Met Ser Gln Gln Gly Gly Pro Gly Met Gly Pro
210          215          220
Pro Met Pro Thr Val Asn Arg Lys Ala Gln Glu Ala Ala Ala Val
225          230          235          240
Met Gln Ala Ala Ala Asn Ser Ala Gln Ser Arg Tyr Ala Thr Gln Glu
245          250          255
His Ala Pro Gly Arg Gln Gly Ser Phe Pro Gly Met Asn Gln Ser Gly
260          265          270

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Leu Met Ala Ser Ser Ser Pro Tyr Ser Gln Pro Met Asn Asn Ser Ser
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 Val Asn Ser Ser Ala Ala Ser Val Gly Leu Ala Asp Met Met Ser Pro
 305 310 315 320
 Gly Glu Ser Lys Leu Pro Leu Pro Leu Lys Ala Asp Gly Lys Glu Glu
 325 330 335
 Gly Thr Pro Gln Pro Glu Ser Lys Ser Lys Asp Ser Tyr Ser Ser Gln
 340 345 350
 Gly Ile Ser Gln Pro Pro Thr Pro Gly Asn Leu Pro Val Pro Ser Pro
 355 360 365
 Met Ser Pro Ser Ser Ala Ser Ile Ser Ser Phe His Gly Asp Glu Ser
 370 375 380
 Asp Ser Ile Ser Ser Pro Gly Trp Pro Lys Thr Pro Ser Ser Pro Lys
 385 390 395 400
 Ser Ser Ser Ser Thr Thr Gly Glu Lys Ile Thr Lys Val Tyr Glu
 405 410 415
 Leu Gly Asn Glu Pro Glu Arg Lys Leu Trp Val Asp Arg Tyr Leu Thr
 420 425 430
 Phe Met Glu Glu Arg Gly Ser Pro Val Ser Ser Leu Pro Ala Val Gly
 435 440 445
 Lys Lys Pro Leu Asp Leu Phe Arg Leu Tyr Val Cys Val Lys Glu Ile
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 Thr Asn Leu Asn Val Gly Thr Ser Ser Ser Ala Ala Ser Ser Met Lys
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 Lys Gln Tyr Ile Gln Tyr Leu Phe Ala Phe Glu Ser Lys Ile Glu Pro
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 515 520 525
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 Ser Thr Pro His Gly Gln Met Thr Pro Met Gln Gly Gly Arg Ser Ser
 545 550 555 560
 Thr Ile Ser Val His Asp Pro Phe Ser Asp Val Ser Asp Ser Ser Phe
 565 570 575
 Pro Lys Arg Asn Ser Met Thr Pro Asn Ala Pro Tyr Gln Gln Gly Met
 580 585 590
 Ser Met Pro Asp Val Met Gly Arg Met Pro Tyr Glu Pro Asn Lys Asp
 595 600 605
 Pro Phe Gly Gly Met Arg Lys Val Pro Gly Ser Ser Glu Pro Phe Met
 610 615 620
 Thr Gln Gly Gln Met Pro Asn Ser Ser Met Gln Asp Met Tyr Asn Gln
 625 630 635 640
 Ser Pro Ser Gly Ala Met Ser Asn Leu Gly Met Gly Gln Arg Gln Gln
 645 650 655
 Phe Pro Tyr Gly Ala Ser Tyr Asp Arg Ser Thr Val Ala Thr Phe Asn
 660 665 670
 Leu Ser Gln Leu Ser Gly Phe Leu Glu Leu Leu Val Glu Tyr Phe Arg
 675 680 685
 Lys Cys Leu Ile Asp Ile Phe Gly Ile Leu Met Glu Tyr Glu Val Gly
 690 695 700
 Asp Pro Ser Gln Lys Ala Leu Asp His Asn Ala Ala Arg Lys Asp Asp

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Cys Ile Asp Asp Asp Glu Glu Asp Glu Glu Asp Glu Glu Glu Asp Ser						
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Glu Lys Thr Glu Ser Asp Glu Lys Ser Ser Ile Ala Leu Thr Ala Pro						
	755		760		765	
Asp Ala Ala Ala Asp Pro Lys Glu Lys Pro Lys Gln Ala Ser Lys Phe						
	770		775		780	
Asp Lys Leu Pro Ile Lys Ile Val Lys Lys Asn Asn Leu Phe Val Val						
	785		790		795	800
Asp Arg Ser Asp Lys Leu Gly Arg Val Gln Glu Phe Asn Ser Gly Leu						
	805		810		815	
Leu His Trp Gln Leu Gly Gly Gly Asp Thr Thr Glu His Ile Gln Thr						
	820		825		830	
His Phe Glu Ser Lys Met Glu Ile Pro Pro Arg Arg Arg Pro Pro Pro						
	835		840		845	
Pro Leu Ser Ser Ala Gly Arg Lys Lys Glu Gln Glu Gly Lys Gly Asp						
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Ser Glu Glu Gln Gln Glu Lys Ser Ile Ile Ala Thr Ile Asp Asp Val						
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Leu Ser Ala Arg Pro Gly Ala Leu Pro Glu Asp Ala Asn Pro Gly Pro						
	885		890		895	
Gln Thr Glu Ser Ser Lys Phe Pro Phe Gly Ile Gln Gln Ala Lys Ser						
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His Arg Asn Ile Lys Leu Leu Glu Asp Glu Pro Arg Ser Arg Asp Glu						
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Thr Pro Leu Cys Thr Ile Ala His Trp Gln Asp Ser Leu Ala Lys Arg						
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Cys Ile Cys Val Ser Asn Ile Val Arg Ser Leu Ser Phe Val Pro Gly						
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Asn Asp Ala Glu Met Ser Lys His Pro Gly Leu Val Leu Ile Leu Gly						
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Lys Leu Ile Leu Leu His His Glu His Pro Glu Arg Lys Arg Ala Pro						
	980		985		990	
Gln Thr Tyr Glu Lys Glu Glu Asp Glu Asp Lys Gly Val Ala Cys Ser						
	995		1000		1005	
Lys Asp Glu Trp Trp Trp Asp Cys Leu Glu Val Leu Arg Asp Asn Thr						
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Leu Val Thr Leu Ala Asn Ile Ser Gly Gln Leu Asp Leu Ser Ala Tyr						
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Thr Glu Ser Ile Cys Leu Pro Ile Leu Asp Gly Leu Leu His Trp Met						
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Val Cys Pro Ser Ala Glu Ala Gln Asp Pro Phe Pro Thr Val Gly Pro						
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Asn Ser Val Leu Ser Pro Gln Arg Leu Val Leu Glu Thr Leu Cys Lys						
	1075		1080		1085	
Leu Ser Ile Gln Asp Asn Asn Val Asp Leu Ile Leu Ala Thr Pro Pro						
	1090		1095		1100	
Phe Ser Arg Gln Glu Lys Phe Tyr Ala Thr Leu Val Arg Tyr Val Gly						
	1105		1110		1115	1120
Asp Arg Lys Asn Pro Val Cys Arg Glu Met Ser Met Ala Leu Leu Ser						
	1125		1130		1135	
Asn Leu Ala Gln Gly Asp Ala Leu Ala Ala Arg Ala Ile Ala Val Gln						
	1140		1145		1150	

Lys Gly Ser Ile Gly Asn Leu Ile Ser Phe Leu Glu Asp Gly Val Thr
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 Met Ala Gln Tyr Gln Gln Ser Gln His Asn Leu Met His Met Gln Pro
 1170 1175 1180
 Pro Pro Leu Glu Pro Pro Ser Val Asp Met Met Cys Arg Ala Ala Lys
 1185 1190 1195 1200
 Ala Leu Leu Ala Met Ala Arg Val Asp Glu Asn Arg Ser Glu Phe Leu
 1205 1210 1215
 Leu His Glu Gly Arg Leu Leu Asp Ile Ser Ile Ser Ala Val Leu Asn
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 <211> 2887
 <212> DNA
 <213> Homo Sapien

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<210> 35

<211> 488

<212> PRT

<213> Homo Sapien

<400> 35

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Leu Ser Asp Asn Ile Tyr Pro Val Glu Asp Leu Ala Ala Thr Ser Val
 35         40         45
Thr Ile Phe Pro Asn Ala Glu Leu Gly Gly Pro Phe Asp Gln Met Asn
 50         55         60
Gly Val Ala Gly Asp Gly Met Ile Asn Ile Asp Met Thr Gly Glu Lys
 65         70         75         80
Arg Ser Leu Asp Leu Pro Tyr Pro Ser Ser Phe Ala Pro Val Ser Ala
 85         90         95
Pro Arg Asn Gln Thr Phe Thr Tyr Met Gly Lys Phe Ser Ile Asp Pro
100        105        110
Gln Tyr Pro Gly Ala Ser Cys Tyr Pro Glu Gly Ile Ile Asn Ile Val
115        120        125
Ser Ala Gly Ile Leu Gln Gly Val Thr Ser Pro Ala Ser Thr Thr Ala
130        135        140
Ser Ser Ser Val Thr Ser Ala Ser Pro Asn Pro Leu Ala Thr Gly Pro
145        150        155        160
Leu Gly Val Cys Thr Met Ser Gln Thr Gln Pro Asp Leu Asp His Leu
165        170        175
Tyr Ser Pro Pro Pro Pro Pro Pro Tyr Ser Gly Cys Ala Gly Asp
180        185        190
Leu Tyr Gln Asp Pro Ser Ala Phe Leu Ser Ala Ala Thr Thr Ser Thr
195        200        205
Ser Ser Ser Leu Ala Tyr Pro Pro Pro Ser Tyr Pro Ser Pro Lys
210        215        220
Pro Ala Thr Asp Pro Gly Leu Phe Pro Met Ile Pro Asp Tyr Pro Gly
225        230        235        240
Phe Phe Pro Ser Gln Cys Gln Arg Asp Leu His Gly Thr Ala Gly Pro
245        250        255
Asp Arg Lys Pro Phe Pro Cys Pro Leu Asp Thr Leu Arg Val Pro Pro

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260 265 270
 Pro Leu Thr Pro Leu Ser Thr Ile Arg Asn Phe Thr Leu Gly Gly Pro
 275 280 285
 Ser Ala Gly Val Thr Gly Pro Gly Ala Ser Gly Gly Ser Glu Gly Pro
 290 295 300
 Arg Leu Pro Gly Ser Ser Ser Ala Ala Ala Ala Ala Ala Ala Ala
 305 310 315 320
 Ala Tyr Asn Pro His His Leu Pro Leu Arg Pro Ile Leu Arg Pro Arg
 325 330 335
 Lys Tyr Pro Asn Arg Pro Ser Lys Thr Pro Val His Glu Arg Pro Tyr
 340 345 350
 Pro Cys Pro Ala Glu Gly Cys Asp Arg Arg Phe Ser Arg Ser Asp Glu
 355 360 365
 Leu Thr Arg His Ile Arg Ile His Thr Gly His Lys Pro Phe Gln Cys
 370 375 380
 Arg Ile Cys Met Arg Asn Phe Ser Arg Ser Asp His Leu Thr Thr His
 385 390 395 400
 Ile Arg Thr His Thr Gly Glu Lys Pro Phe Ala Cys Asp Tyr Cys Gly
 405 410 415
 Arg Lys Phe Ala Arg Ser Asp Glu Arg Lys Arg His Thr Lys Ile His
 420 425 430
 Leu Arg Gln Lys Glu Arg Lys Ser Ser Ala Pro Ser Ala Ser Val Pro
 435 440 445
 Ala Pro Ser Thr Ala Ser Cys Ser Gly Gly Val Gln Pro Gly Gly Thr
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 Leu Cys Ser Ser Asn Ser Ser Ser Leu Gly Gly Gly Pro Leu Ala Pro
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 Cys Ser Ser Arg Thr Arg Thr Pro
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<210> 36
 <211> 300
 <212> DNA
 <213> Homo Sapien

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 aactacacga aggccatgcg gctgtttgtg ggagaaccgg tgtggacagc gtacaaccgg 240
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 <213> Homo Sapien

<400> 37
 Ile Lys Met Phe Tyr Glu Glu His Leu His Leu Asp Asp Glu Ile Arg
 1 5 10 15
 Tyr Ile Leu Asp Gly Ser Gly Tyr Phe Asp Val Arg Asp Lys Glu Asp
 20 25 30
 Gln Trp Ile Arg Ile Phe Met Glu Lys Gly Asp Met Val Thr Leu Pro
 35 40 45
 Ala Gly Ile Tyr His Arg Phe Thr Val Asp Glu Lys Asn Tyr Thr Lys

50	55	60
Ala Met Arg Leu Phe Val Gly Glu Pro Val Trp Thr Ala Tyr Asn Arg		
65	70	75
Pro Ala Asp His Phe Glu Ala Arg Gly Gln Tyr Val Lys Phe Leu Ala		
85	90	95
Gln Thr Ala		

<210> 38
 <211> 2404
 <212> DNA
 <213> Homo Sapien

<400> 38

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ttaaaaacttt	ttgctaattt	tccaagtggt	agtcctgttt	cagcatcaac	actggcacga	180
gcagggttttc	tttatactgg	tgaaggagat	accgtgcggt	gctttagttg	tcatgcagct	240
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tgcagatttta	tcaacggctt	ttatcttgaa	aatagtgcc	cgcagtctac	aaattctggt	360
atccagaatg	gtcagtacaa	agttgaaaac	tatctgggaa	gcagagatca	ttttgcctta	420
gacaggccat	ctgagacaca	tgcagactat	cttttgagaa	ctgggcaggt	tgtagatata	480
tcagacacca	tatacccgag	gaaccctgcc	atgtatagtg	aagaagctag	attaaagtcc	540
tttcagaact	ggccagacta	tgctcaccta	acccaagag	agttagcaag	tgctggactc	600
tactacacag	gtattggtga	ccaagtgcag	tgcttttggt	gtggtggaaa	actgaaaaat	660
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catcttccaa	aatcctatgg	tacaagaagc	tatacgaatg	gggttcagtt	tcaaggacat	1200
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gaaagataga	gattgttttt	agaggttggt	tgttgtgttt	taggattctg	tccattttct	2040
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tgtat						2404

<210> 39
 <211> 278
 <212> PRT
 <213> Homo Sapien

<400> 39

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			20					25					30		
Asn	Ser	Thr	Asn	Leu	Pro	Arg	Asn	Pro	Ser	Met	Ala	Asp	Tyr	Glu	Ala
			35				40					45			
Arg	Ile	Phe	Thr	Phe	Gly	Thr	Trp	Ile	Tyr	Ser	Val	Asn	Lys	Glu	Gln
	50					55					60				
Leu	Ala	Arg	Ala	Gly	Phe	Tyr	Ala	Leu	Gly	Glu	Gly	Asp	Lys	Val	Lys
65					70					75				80	
Cys	Phe	His	Cys	Gly	Gly	Gly	Leu	Thr	Asp	Trp	Lys	Pro	Ser	Glu	Asp
				85					90					95	
Pro	Trp	Glu	Gln	His	Ala	Lys	Trp	Tyr	Pro	Gly	Cys	Lys	Tyr	Leu	Leu
			100					105					110		
Glu	Gln	Lys	Gly	Gln	Glu	Tyr	Ile	Asn	Asn	Ile	His	Leu	Thr	His	Ser
			115				120					125			
Leu	Glu	Glu	Cys	Leu	Val	Arg	Thr	Thr	Glu	Lys	Thr	Pro	Ser	Leu	Thr
	130					135					140				
Arg	Arg	Ile	Asp	Asp	Thr	Ile	Phe	Gln	Asn	Pro	Met	Val	Gln	Glu	Ala
145					150					155				160	
Ile	Arg	Met	Gly	Phe	Ser	Phe	Lys	Asp	Ile	Lys	Lys	Ile	Met	Glu	Glu
				165				170						175	
Lys	Ile	Gln	Ile	Ser	Gly	Ser	Asn	Tyr	Lys	Ser	Leu	Glu	Val	Leu	Val
			180				185						190		
Ala	Asp	Leu	Val	Asn	Ala	Gln	Lys	Asp	Ser	Met	Gln	Asp	Glu	Ser	Ser
		195				200						205			
Gln	Thr	Ser	Leu	Gln	Lys	Glu	Ile	Ser	Thr	Glu	Glu	Gln	Leu	Arg	Arg
	210				215							220			
Leu	Gln	Glu	Glu	Lys	Leu	Cys	Lys	Ile	Cys	Met	Asp	Arg	Asn	Ile	Ala
225				230						235				240	
Ile	Val	Phe	Val	Pro	Cys	Gly	His	Leu	Val	Thr	Cys	Lys	Gln	Cys	Ala
				245				250						255	
Glu	Ala	Val	Asp	Lys	Cys	Pro	Met	Cys	Tyr	Thr	Val	Ile	Thr	Phe	Lys
			260					265					270		
Gln	Lys	Ile	Phe	Met	Ser										
			275												

<210> 40
 <211> 2409
 <212> DNA
 <213> Homo Sapien

<400> 40

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ccgtgcact	tcgccgcagg	ttttgggcgg	aaagacgtag	ttgaatattt	gcttcagaat	240
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gatggataa						2409

<210> 41
 <211> 802
 <212> PRT
 <213> Homo Sapien

<400> 41
 Met Ser Gly Arg Arg Cys Ala Gly Gly Gly Ala Ala Cys Ala Ser Ala
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 Ala Ala Glu Ala Val Glu Pro Ala Ala Arg Glu Leu Phe Glu Ala Cys
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 Arg Asn Gly Asp Val Glu Arg Val Lys Arg Leu Val Thr Pro Glu Lys
 35 40 45
 Val Asn Ser Arg Asp Thr Ala Gly Arg Lys Ser Thr Pro Leu His Phe
 50 55 60
 Ala Ala Gly Phe Gly Arg Lys Asp Val Val Glu Tyr Leu Leu Gln Asn
 65 70 75 80
 Gly Ala Asn Val Gln Ala Arg Asp Asp Gly Gly Leu Ile Pro Leu His
 85 90 95

Asn	Ala	Cys	Ser	Phe	Gly	His	Ala	Glu	Val	Val	Asn	Leu	Leu	Leu	Arg	100	105	110
His	Gly	Ala	Asp	Pro	Asn	Ala	Arg	Asp	Asn	Trp	Asn	Tyr	Thr	Pro	Leu	115	120	125
His	Glu	Ala	Ala	Ile	Lys	Gly	Lys	Ile	Asp	Val	Cys	Ile	Val	Leu	Leu	130	135	140
Gln	His	Gly	Ala	Glu	Pro	Thr	Ile	Arg	Asn	Thr	Asp	Gly	Arg	Thr	Ala	145	150	155
Leu	Asp	Leu	Ala	Asp	Pro	Ser	Ala	Lys	Ala	Val	Leu	Thr	Gly	Lys	Ser	165	170	175
Val	Tyr	Ser	Gly	Tyr	Ser	Arg	Lys	Pro	Val	Lys	Asn	Asn	Leu	Ala	Arg	180	185	190
Ser	Gly	Asn	Glu	Glu	Lys	Met	Met	Ala	Leu	Leu	Thr	Pro	Leu	Asn	Val	195	200	205
Asn	Cys	His	Ala	Ser	Asp	Gly	Arg	Lys	His	Gly	Ala	Cys	Val	Asn	Ala	210	215	220
Met	Asp	Leu	Trp	Gln	Phe	Thr	Pro	Leu	His	Glu	Ala	Ala	Ser	Lys	Asn	225	230	235
Arg	Val	Glu	Val	Cys	Ser	Leu	Leu	Leu	Ser	Tyr	Gly	Ala	Asp	Pro	Thr	245	250	255
Leu	Leu	Asn	Cys	His	Asn	Lys	Ser	Ala	Ile	Asp	Leu	Ala	Pro	Thr	Pro	260	265	270
Gln	Leu	Lys	Glu	Arg	Leu	Ala	Tyr	Glu	Phe	Lys	Gly	His	Ser	Leu	Leu	275	280	285
Gln	Ala	Ala	Arg	Glu	Ala	Asp	Val	Thr	Arg	Ile	Lys	Lys	His	Leu	Ser	290	295	300
Leu	Glu	Met	Val	Asn	Phe	Lys	His	Pro	Gln	Thr	His	Glu	Thr	Ala	Leu	305	310	315
Lys	Leu	Cys	Thr	Val	Gln	Ser	Val	Asn	Cys	Arg	Asp	Ile	Glu	Gly	Arg	325	330	335
Gln	Ser	Thr	Pro	Leu	His	Phe	Ala	Ala	Gly	Tyr	Asn	Arg	Val	Ser	Val	340	345	350
Val	Glu	Tyr	Leu	Leu	Gln	His	Gly	Ala	Asp	Val	His	Ala	Lys	Asp	Lys	355	360	365
Gly	Gly	Leu	Val	Pro	Leu	His	Asn	Ala	Cys	Ser	Tyr	Gly	His	Tyr	Glu	370	375	380
Val	Ala	Glu	Leu	Leu	Val	Lys	His	Gly	Ala	Val	Val	Asn	Val	Ala	Asp	385	390	395
Leu	Trp	Lys	Phe	Thr	Pro	Leu	His	Glu	Ala	Ala	Ala	Lys	Gly	Lys	Tyr	405	410	415
Glu	Ile	Cys	Lys	Leu	Leu	Leu	Gln	His	Gly	Ala	Asp	Pro	Thr	Lys	Lys	420	425	430
Asn	Arg	Asp	Gly	Asn	Thr	Pro	Leu	Asp	Leu	Val	Lys	Asp	Gly	Asp	Thr	435	440	445
Asp	Ile	Gln	Asp	Leu	Leu	Arg	Gly	Asp	Ala	Ala	Leu	Leu	Asp	Ala	Ala	450	455	460
Lys	Lys	Gly	Cys	Leu	Ala	Arg	Val	Lys	Lys	Leu	Ser	Ser	Pro	Asp	Asn	465	470	475
Val	Asn	Cys	Arg	Asp	Thr	Gln	Gly	Arg	His	Ser	Thr	Pro	Leu	His	Leu	485	490	495
Ala	Ala	Gly	Tyr	Asn	Asn	Leu	Glu	Val	Ala	Glu	Tyr	Leu	Leu	Gln	His	500	505	510
Gly	Ala	Asp	Val	Asn	Ala	Gln	Asp	Lys	Gly	Gly	Leu	Ile	Pro	Leu	His	515	520	525
Asn	Ala	Ala	Ser	Tyr	Gly	Ile	Thr	Leu	Asp	Val	Leu	Val	Glu	Met	Gly			

530		535		540
His Lys Glu Leu Lys Glu Ile Gly Ile Asn Ala Tyr Gly His Arg His				
545		550		555
Lys Leu Ile Lys Gly Val Glu Arg Leu Ile Ser Gly Gln Gln Gly Leu				560
	565		570	575
Asn Pro Tyr Leu Thr Leu Asn Thr Ser Gly Ser Gly Thr Ile Leu Ile				
	580		585	590
Asp Leu Ser Pro Asp Asp Lys Glu Phe Gln Ser Val Glu Glu Glu Met				
	595		600	605
Gln Ser Thr Val Arg Glu His Arg Asp Gly Gly His Ala Gly Gly Ile				
	610		615	620
Phe Asn Arg Tyr Asn Ile Leu Lys Ile Gln Lys Val Cys Asn Lys Lys				
625		630		635
Leu Trp Glu Arg Tyr Thr His Arg Arg Lys Glu Val Ser Glu Glu Asn				640
	645		650	655
His Asn His Ala Asn Glu Arg Met Leu Phe His Gly Ser Pro Phe Val				
	660		665	670
Asn Ala Ile Ile His Lys Gly Phe Asp Glu Arg His Ala Tyr Ile Gly				
	675		680	685
Gly Met Phe Gly Ala Gly Ile Tyr Phe Ala Glu Asn Ser Ser Lys Ser				
	690		695	700
Asn Gln Tyr Val Tyr Gly Ile Gly Gly Gly Thr Gly Cys Pro Val His				
705		710		715
Lys Asp Arg Ser Cys Tyr Ile Cys His Arg Gln Leu Leu Phe Cys Arg				
	725		730	735
Val Thr Leu Gly Lys Ser Phe Leu Gln Phe Ser Ala Met Lys Met Ala				
	740		745	750
His Ser Pro Pro Gly His His Ser Val Thr Gly Arg Pro Ser Val Asn				
	755		760	765
Gly Leu Ala Leu Ala Glu Tyr Val Ile Tyr Arg Gly Glu Gln Ala Tyr				
	770		775	780
Pro Glu Tyr Leu Ile Thr Tyr Gln Ile Met Arg Pro Glu Gly Met Val				
785		790		795
Asp Gly				800

<210> 42
 <211> 5175
 <212> DNA
 <213> Homo Sapien

<400> 42	
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agaatggggt	gaacgtctc
	120
caccttgctt	ccaaagaagg
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cttggttaca	aatggagcca
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	300
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acctggaagt	tgtcaagttt
	360
cttcttgaca	atgggtgcaag
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cgaccaagtc	gtttcgctcc
tgctagagaa	tgacacccaa
	480
ggaaaagtgc	gtctcccagc
tcttcatatc	gcggcccga
aagacgacac	gaaagccgcc
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caaagagtgg	cttcactccg
	600
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tggaaatata	aatgtagcca
cgttgctgtt	aaaccgagcg
	660
gctgctgtgg	atttcaccgc
aaggaatgac	atcactcctt
tacatgttgc	atcaaaaaga
	720
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actattgctc	gatcgaggag
ctaaaatcga	tgccaaaacc
	780

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aagagccact	cgtaa					5175

<210> 43
 <211> 1724
 <212> PRT
 <213> Homo Sapien

<400> 43

Ser	Asp	Ala	Asn	Ala	Ser	Tyr	Leu	Arg	Ala	Ala	Arg	Ala	Gly	His	Leu
1			5				10				15				
Glu	Lys	Ala	Leu	Asp	Tyr	Ile	Lys	Asn	Gly	Val	Asp	Ile	Asn	Ile	Cys
			20				25				30				
Asn	Gln	Asn	Gly	Leu	Asn	Ala	Leu	His	Leu	Ala	Ser	Lys	Glu	Gly	His
			35				40				45				
Val	Glu	Val	Val	Ser	Glu	Leu	Leu	Gln	Arg	Glu	Ala	Asn	Val	Asp	Ala
			50				55				60				
Ala	Thr	Lys	Lys	Gly	Asn	Thr	Ala	Leu	His	Ile	Ala	Ser	Leu	Ala	Gly
65							70				75				80
Gln	Ala	Glu	Val	Val	Lys	Val	Leu	Val	Thr	Asn	Gly	Ala	Asn	Val	Asn
							85				90				95
Ala	Gln	Ser	Gln	Asn	Gly	Phe	Thr	Pro	Leu	Tyr	Met	Ala	Ala	Gln	Glu
Asn	His	Leu	Glu	Val	Val	Lys	Phe	Leu	Leu	Asp	Asn	Gly	Ala	Ser	Gln
Ser	Leu	Ala	Thr	Glu	Asp	Gly	Phe	Thr	Pro	Leu	Ala	Val	Ala	Leu	Gln
Gln	Gly	His	Asp	Gln	Val	Val	Ser	Leu	Leu	Leu	Glu	Asn	Asp	Thr	Lys
145															160
Gly	Lys	Val	Arg	Leu	Pro	Ala	Leu	His	Ile	Ala	Ala	Arg	Lys	Asp	Asp
Thr	Lys	Ala	Ala	Ala	Leu	Leu	Leu	Gln	Asn	Asp	Asn	Asn	Ala	Asp	Val
Glu	Ser	Lys	Ser	Gly	Phe	Thr	Pro	Leu	His	Ile	Ala	Ala	His	Tyr	Gly
Asn	Ile	Asn	Val	Ala	Thr	Leu	Leu	Leu	Asn	Arg	Ala	Ala	Ala	Val	Asp

Gln Ala Arg Arg Val Thr Gly Gly Leu Leu Asp Arg Leu Asp Asp Ser
1540 1545 1550
Pro Asp Gln Cys Arg Asp Ser Ile Thr Ser Tyr Leu Lys Gly Glu Ala
1555 1560 1565
Gly Lys Phe Glu Ala Asn Gly Ser His Thr Glu Ile Thr Pro Glu Ala
1570 1575 1580
Lys Thr Lys Ser Tyr Phe Pro Glu Ser Gln Asn Asp Val Gly Lys Gln
1585 1590 1595 1600
Ser Thr Lys Glu Thr Leu Lys Pro Lys Ile His Gly Ser Gly His Val
1605 1610 1615
Glu Glu Pro Ala Ser Pro Leu Ala Ala Tyr Gln Lys Ser Leu Glu Glu
1620 1625 1630
Thr Ser Lys Leu Ile Ile Glu Glu Thr Lys Pro Cys Val Pro Asp Leu
1635 1640 1645
Lys Asp Ser Glu Ser Asp Ser Ser Ser Glu Glu Glu Arg Arg Val Thr
1650 1655 1660
Thr Arg Val Ile Arg Arg Arg Leu Ile Ile Lys Gly Glu Glu Ala Lys
1665 1670 1675 1680
Asn Ile Pro Gly Glu Ser Val Thr Glu Glu Gln Phe Thr Asp Glu Glu
1685 1690 1695
Gly Asn Leu Ile Thr Arg Lys Gly Glu Gly Phe Lys Val Lys Thr Lys
1700 1705 1710
Lys Glu Ile Arg His Val Glu Lys Lys Ser His Ser
1715 1720

<210> 44
<211> 1305
<212> DNA
<213> Homo Sapien

<400> 44
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agcggcggcg acgagaagt tatgacatca gggtttgaag acaagcaatc aacctgtgag 180
acaaaggaac aggagccaaa attggtgaaa cccaagaaaa agagaagaaa aaagtcagtc 240
tatactgtag gcctgagagg gctaataaat cttgggaaca cttgttttat gaattgtatt 300
gtccaggcac ttacccatat tcctctactg aaagatttct tcctctctga caagcacaaa 360
tgtataatga caagcccag cttgtgtctg gtctgtgaaa tgtcttcgct tttcatgct 420
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catgcagaac atttagcagg gtacaggcag caggatgccc atgagttcct tattgcaata 540
ttagacgtgc tacatagaca cagcaaagat gatagtgggtg ggcaggaggc caataacccc 600
aactgctgta actgcatcat agaccaaatc ttacagggtg gcctgcaatc agatgtcaca 660
tgtcaagcct gccatagtgt ttctaccacc atagacccat gctgggacat cagtttggac 720
ttgcctggct cttgtgccac attcgattcc cagaaccag agagggctga cagcacagt 780
agcagggatg accacatacc aggaatcccc tcacttacag actgtctaca gtggtttaca 840
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cggtttgagc atgtaggcaa acagaggcga aagattaata ctttatctc ctttcccttg 1020
gagctggaca tgactccgtt tttggcctct actaaagaga gcagaatgaa agaaggccag 1080
ccaccaacag attgtgtgcc caatgagaat aagtattcct tgtttgcagt gattaatcac 1140
catggaactt tggaaagtgg ccactatacc agcttcatcc ggcaacaaaa ggaccagtgg 1200
ttcagctgtg atgatgccat catcaccaag gctaccattg aggacttact ctacagtgaa 1260
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<210> 45

<211> 434
 <212> PRT
 <213> Homo Sapien

<400> 45

Met	Glu	Glu	Ala	Ala	Ala	Gly	Ala	Thr	Lys	Ala	Ser	Ser	Arg	Arg	Glu	1	5	10	15
Ala	Glu	Glu	Met	Lys	Leu	Glu	Pro	Leu	Gln	Glu	Arg	Glu	Pro	Ala	Pro	20	25	30	
Glu	Glu	Asn	Leu	Thr	Trp	Ser	Ser	Ser	Gly	Gly	Asp	Glu	Lys	Phe	Met	35	40	45	
Thr	Ser	Gly	Phe	Glu	Asp	Lys	Gln	Ser	Thr	Cys	Glu	Thr	Lys	Glu	Gln	50	55	60	
Glu	Pro	Lys	Leu	Val	Lys	Pro	Lys	Lys	Lys	Arg	Arg	Lys	Lys	Ser	Val	65	70	75	80
Tyr	Thr	Val	Gly	Leu	Arg	Gly	Leu	Ile	Asn	Leu	Gly	Asn	Thr	Cys	Phe	85	90	95	
Met	Asn	Cys	Ile	Val	Gln	Ala	Leu	Thr	His	Ile	Pro	Leu	Leu	Lys	Asp	100	105	110	
Phe	Phe	Leu	Ser	Asp	Lys	His	Lys	Cys	Ile	Met	Thr	Ser	Pro	Ser	Leu	115	120	125	
Cys	Leu	Val	Cys	Glu	Met	Ser	Ser	Leu	Phe	His	Ala	Met	Tyr	Ser	Gly	130	135	140	
Ser	Arg	Thr	Pro	His	Ile	Pro	Tyr	Lys	Leu	Leu	His	Leu	Ile	Trp	Ile	145	150	155	160
His	Ala	Glu	His	Leu	Ala	Gly	Tyr	Arg	Gln	Gln	Asp	Ala	His	Glu	Phe	165	170	175	
Leu	Ile	Ala	Ile	Leu	Asp	Val	Leu	His	Arg	His	Ser	Lys	Asp	Asp	Ser	180	185	190	
Gly	Gly	Gln	Glu	Ala	Asn	Asn	Pro	Asn	Cys	Cys	Asn	Cys	Ile	Ile	Asp	195	200	205	
Gln	Ile	Phe	Thr	Gly	Gly	Leu	Gln	Ser	Asp	Val	Thr	Cys	Gln	Ala	Cys	210	215	220	
His	Ser	Val	Ser	Thr	Thr	Ile	Asp	Pro	Cys	Trp	Asp	Ile	Ser	Leu	Asp	225	230	235	240
Leu	Pro	Gly	Ser	Cys	Ala	Thr	Phe	Asp	Ser	Gln	Asn	Pro	Glu	Arg	Ala	245	250	255	
Asp	Ser	Thr	Val	Ser	Arg	Asp	Asp	His	Ile	Pro	Gly	Ile	Pro	Ser	Leu	260	265	270	
Thr	Asp	Cys	Leu	Gln	Trp	Phe	Thr	Arg	Pro	Glu	His	Leu	Gly	Ser	Ser	275	280	285	
Ala	Lys	Ile	Lys	Cys	Asn	Ser	Cys	Gln	Ser	Tyr	Gln	Glu	Ser	Thr	Lys	290	295	300	
Gln	Leu	Thr	Met	Lys	Lys	Leu	Pro	Ile	Val	Ala	Cys	Phe	His	Leu	Lys	305	310	315	320
Arg	Phe	Glu	His	Val	Gly	Lys	Gln	Arg	Arg	Lys	Ile	Asn	Thr	Phe	Ile	325	330	335	
Ser	Phe	Pro	Leu	Glu	Leu	Asp	Met	Thr	Pro	Phe	Leu	Ala	Ser	Thr	Lys	340	345	350	
Glu	Ser	Arg	Met	Lys	Glu	Gly	Gln	Pro	Pro	Thr	Asp	Cys	Val	Pro	Asn	355	360	365	
Glu	Asn	Lys	Tyr	Ser	Leu	Phe	Ala	Val	Ile	Asn	His	His	Gly	Thr	Leu	370	375	380	
Glu	Ser	Gly	His	Tyr	Thr	Ser	Phe	Ile	Arg	Gln	Gln	Lys	Asp	Gln	Trp	385	390	395	400

Phe Ser Cys Asp Asp Ala Ile Ile Thr Lys Ala Thr Ile Glu Asp Leu
405 410 415
Leu Tyr Ser Glu Gly Tyr Leu Leu Phe Tyr His Lys Gln Gly Leu Glu
420 425 430
Lys Asp

<210> 46
<211> 1337
<212> DNA
<213> Homo Sapien

<400> 46
gcagtaacag ccaccctcct gtcacgcgca ccaccgttgt gtccctcaag gctgcgaatc 60
tgacgtatat gccctcatcc agcggctctg cccgctcgct gaattgtgga tgcagcagtg 120
ccagctgctg cactgtggca acctacgaca aggacaatca ggcccagacc caagccattg 180
ccgctggcac caccaccact gccatcgga cctctaccac ctgccctgct aaccagatgg 240
tcaacaataa tgagaatata ggctctctaa gtccatcaag tgggggtggg agccctgtgt 300
cagggacccc caagcagcta gccagcatca aaataatcta cccaatgac ttggcaaaga 360
agatgaccaa atgcagcaag agtcacctgc cgagtcaggg ccctgtcatc attgactgca 420
ggcccttcat ggagtacaac aagagtcaca tccaaggagc tgtccacatt aactgtgccg 480
ataagatcag ccggcggaga ctgcagcagg gcaagatcac tgtcctagac ttgatttcct 540
gtagggaagg caaggactct ttcaagagga tcttttccaa agaaattata gtttatgatg 600
agaataccaa tgagccaagc cgagtgatgc cctcccagcc acttcacata gtcctcgagt 660
ccctgaagag agaaggcaaa gaacctctgg tgttgaaagg tggacttagt agttttaagc 720
agaacatga aaacctctgt gacaactccc tccagctcca agagtgccgg gaggtggggg 780
gcggcgcatc cgcggcctcg agcttgctac ctacagccat cccaccacc cctgacatcg 840
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accagtgtgg gaaggggctt ctcatccact gccaggctgg ggtgtccgc tccgccacca 1140
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tcaaaggcaa acgaccaatt atctcccaa accttaactt catggggcag ttgctagagt 1260
tcgaggaaga cctaaacaac ggtgtgacac cgagaatcct tacaccaaag ctgatgggcg 1320
tggagacggg tgtgtga 1337

<210> 47
<211> 444
<212> PRT
<213> Homo Sapien

<400> 47
Ser Asn Ser His Pro Pro Val Ile Ala Thr Thr Val Val Ser Leu Lys
1 5 10 15
Ala Ala Asn Leu Thr Tyr Met Pro Ser Ser Ser Gly Ser Ala Arg Ser
20 25 30
Leu Asn Cys Gly Cys Ser Ser Ala Ser Cys Cys Thr Val Ala Thr Tyr
35 40 45
Asp Lys Asp Asn Gln Ala Gln Thr Gln Ala Ile Ala Ala Gly Thr Thr
50 55 60
Thr Thr Ala Ile Gly Thr Ser Thr Thr Cys Pro Ala Asn Gln Met Val
65 70 75 80
Asn Asn Asn Glu Asn Thr Gly Ser Leu Ser Pro Ser Ser Gly Val Gly
85 90 95

Ser Pro Val Ser Gly Thr Pro Lys Gln Leu Ala Ser Ile Lys Ile Ile
100 105 110
Tyr Pro Asn Asp Leu Ala Lys Lys Met Thr Lys Cys Ser Lys Ser His
115 120 125
Leu Pro Ser Gln Gly Pro Val Ile Ile Asp Cys Arg Pro Phe Met Glu
130 135 140
Tyr Asn Lys Ser His Ile Gln Gly Ala Val His Ile Asn Cys Ala Asp
145 150 155 160
Lys Ile Ser Arg Arg Arg Leu Gln Gln Gly Lys Ile Thr Val Leu Asp
165 170 175
Leu Ile Ser Cys Arg Glu Gly Lys Asp Ser Phe Lys Arg Ile Phe Ser
180 185 190
Lys Glu Ile Ile Val Tyr Asp Glu Asn Thr Asn Glu Pro Ser Arg Val
195 200 205
Met Pro Ser Gln Pro Leu His Ile Val Leu Glu Ser Leu Lys Arg Glu
210 215 220
Gly Lys Glu Pro Leu Val Leu Lys Gly Gly Leu Ser Ser Phe Lys Gln
225 230 235 240
Asn His Glu Asn Leu Cys Asp Asn Ser Leu Gln Leu Gln Glu Cys Arg
245 250 255
Glu Val Gly Gly Gly Ala Ser Ala Ala Ser Ser Leu Leu Pro Gln Pro
260 265 270
Ile Pro Thr Thr Pro Asp Ile Glu Asn Ala Glu Leu Thr Pro Ile Leu
275 280 285
Pro Phe Leu Phe Leu Gly Asn Glu Gln Asp Ala Gln Asp Leu Asp Thr
290 295 300
Met Gln Arg Leu Asn Ile Gly Tyr Val Ile Asn Val Thr Thr His Leu
305 310 315 320
Pro Leu Tyr His Tyr Glu Lys Gly Leu Phe Asn Tyr Lys Arg Leu Pro
325 330 335
Ala Thr Asp Ser Asn Lys Gln Asn Leu Arg Gln Tyr Phe Glu Glu Ala
340 345 350
Phe Glu Phe Ile Glu Glu Ala His Gln Cys Gly Lys Gly Leu Leu Ile
355 360 365
His Cys Gln Ala Gly Val Ser Arg Ser Ala Thr Ile Val Ile Ala Tyr
370 375 380
Leu Met Lys His Thr Arg Met Thr Met Thr Asp Ala Tyr Lys Phe Val
385 390 395 400
Lys Gly Lys Arg Pro Ile Ile Ser Pro Asn Leu Asn Phe Met Gly Gln
405 410 415
Leu Leu Glu Phe Glu Glu Asp Leu Asn Asn Gly Val Thr Pro Arg Ile
420 425 430
Leu Thr Pro Lys Leu Met Gly Val Glu Thr Val Val
435 440

<210> 48

<211> 3378

<212> DNA

<213> Homo Sapien

<400> 48

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agccctggcc gtgaccttc accatttgag gatgagtcgg aggggctcct aggcacagag	180
gggcccctgg aggaagaaga ggatggagag gagtcattg gagatggcat ggaaagggac	240

<211> 904
 <212> PRT
 <213> Homo Sapien

<400> 49

Leu	Gln	Glu	Ser	Ser	Glu	Ser	Phe	Thr	Met	Ala	Ser	Ser	Pro	Ala	Gln	1	5	10	15
Arg	Arg	Arg	Gly	Asn	Asp	Pro	Leu	Thr	Ser	Ser	Pro	Gly	Arg	Ser	Ser	20	25	30	
Arg	Arg	Thr	Asp	Ala	Leu	Thr	Ser	Ser	Pro	Gly	Arg	Asp	Leu	Pro	Pro	35	40	45	
Phe	Glu	Asp	Glu	Ser	Glu	Gly	Leu	Leu	Gly	Thr	Glu	Gly	Pro	Leu	Glu	50	55	60	
Glu	Glu	Glu	Asp	Gly	Glu	Glu	Leu	Ile	Gly	Asp	Gly	Met	Glu	Arg	Asp	65	70	75	80
Tyr	Arg	Ala	Ile	Pro	Glu	Leu	Asp	Ala	Tyr	Glu	Ala	Glu	Gly	Leu	Ala	85	90	95	
Leu	Asp	Asp	Glu	Asp	Val	Glu	Glu	Leu	Thr	Ala	Ser	Gln	Arg	Glu	Ala	100	105	110	
Ala	Glu	Arg	Ala	Met	Arg	Gln	Arg	Asp	Arg	Glu	Ala	Gly	Arg	Gly	Leu	115	120	125	
Gly	Arg	Met	Arg	Arg	Gly	Leu	Leu	Tyr	Asp	Ser	Asp	Glu	Glu	Asp	Glu	130	135	140	
Glu	Arg	Pro	Ala	Arg	Lys	Arg	Arg	Gln	Val	Glu	Arg	Ala	Thr	Glu	Asp	145	150	155	160
Gly	Glu	Glu	Asp	Glu	Glu	Met	Ile	Glu	Ser	Ile	Glu	Asn	Leu	Glu	Asp	165	170	175	
Leu	Lys	Gly	His	Ser	Val	Arg	Glu	Trp	Val	Ser	Met	Ala	Gly	Pro	Arg	180	185	190	
Leu	Glu	Ile	His	His	Arg	Phe	Lys	Asn	Phe	Leu	Arg	Thr	His	Val	Asp	195	200	205	
Ser	His	Gly	His	Asn	Val	Phe	Lys	Glu	Arg	Ile	Ser	Asp	Met	Cys	Lys	210	215	220	
Glu	Asn	Arg	Glu	Ser	Leu	Val	Val	Asn	Tyr	Glu	Asp	Leu	Ala	Ala	Arg	225	230	235	240
Glu	His	Val	Leu	Ala	Tyr	Phe	Leu	Pro	Glu	Ala	Pro	Ala	Glu	Leu	Leu	245	250	255	
Gln	Ile	Phe	Asp	Glu	Ala	Ala	Leu	Glu	Val	Val	Leu	Ala	Met	Tyr	Pro	260	265	270	
Lys	Tyr	Asp	Arg	Ile	Thr	Asn	His	Ile	His	Val	Arg	Ile	Ser	His	Leu	275	280	285	
Pro	Leu	Val	Glu	Glu	Leu	Arg	Ser	Leu	Arg	Gln	Leu	His	Leu	Asn	Gln	290	295	300	
Leu	Ile	Arg	Thr	Ser	Gly	Val	Val	Thr	Ser	Cys	Thr	Gly	Val	Leu	Pro	305	310	315	320
Gln	Leu	Ser	Met	Val	Lys	Tyr	Asn	Cys	Asn	Lys	Cys	Asn	Phe	Val	Leu	325	330	335	
Gly	Pro	Phe	Cys	Gln	Ser	Gln	Asn	Gln	Glu	Val	Lys	Pro	Gly	Ser	Cys	340	345	350	
Pro	Glu	Cys	Gln	Ser	Ala	Gly	Pro	Phe	Glu	Val	Asn	Met	Glu	Glu	Thr	355	360	365	
Ile	Tyr	Gln	Asn	Tyr	Gln	Arg	Ile	Arg	Ile	Gln	Glu	Ser	Pro	Gly	Lys	370	375	380	
Val	Ala	Ala	Gly	Arg	Leu	Pro	Arg	Ser	Lys	Asp	Ala	Ile	Leu	Leu	Ala	385	390	395	400

Asp	Leu	Val	Asp	Ser	Cys	Lys	Pro	Gly	Asp	Glu	Ile	Glu	Leu	Thr	Gly	
				405					410						415	
Ile	Tyr	His	Asn	Asn	Tyr	Asp	Gly	Ser	Leu	Asn	Thr	Ala	Asn	Gly	Phe	
			420					425						430		
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Gln	Arg	His	Pro	Val	Ser	Arg	Glu	Trp	Thr	Leu	Glu	Ala	Gly	Ala	Leu	
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Lys	Lys	Tyr	Ile	Ile	Tyr	Ala	Lys	Glu	Arg	Val	His	Pro	Lys	Leu	Asn	
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 <212> DNA
 <213> Homo Sapien

<400> 50

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<212> PRT

<213> Homo Sapien

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Val	Ala	Gly	Asp	Ser	Met	Asp	Ser	Val	Lys	Gln	Ser	Ala	Ala	Leu	Cys	
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Val	Pro	Ala	Pro	Trp	Leu	Ser	Val	Lys	Leu	Leu	Arg	Leu	Leu	Gln	Cys	
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Tyr	Pro	Pro	Pro	Glu	Asp	Ala	Ala	Val	Lys	Gly	Arg	Leu	Val	Glu	Cys	
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Leu	Glu	Thr	Val	Leu	Asn	Lys	Ala	Gln	Glu	Pro	Pro	Lys	Ser	Lys	Lys	
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Val	Gln	His	Ser	Asn	Ala	Lys	Asn	Ala	Ile	Leu	Phe	Glu	Thr	Ile	Ser	
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Gln Asp Phe Phe Gln Arg Trp Lys Gln Leu Ser Leu Pro Gln Gln Glu		
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Lys Ala Lys Leu Leu Gly Phe Gly Ser Ala Leu Leu Asp Asn Val Asp		
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<211> 646

<212> PRT

<213> Homo sapiens

<400> 53

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35          40          45
Pro Ala Gly Ser Thr Lys Pro Phe Val His Ala Val Pro Pro Ser Asp
50          55          60
Pro Leu Arg Gln Ala Asn Arg Leu Pro Ile Lys Val Leu Lys Met Leu
65          70          75          80
Thr Ala Arg Thr Gly His Ile Leu His Pro Glu Tyr Leu Gln Pro Leu
85          90          95
Pro Ser Thr Pro Val Ser Pro Ile Glu Leu Asp Ala Lys Lys Ser Pro
100         105         110
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115         120         125
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Thr	Ser	Gly	Ala	Pro	Gly	Ser	Pro	Gly	Thr	Leu	Ala	Leu	Arg	Ser	Pro
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Pro	Tyr	Tyr	Ser	Pro	Tyr	Ala	Leu	Tyr	Gly	Gln	Arg	Leu	Thr	Thr	Ala
625					630					635					640
Ser	Ala	Leu	Gly	Tyr	Gln										
				645											